

Studies on Psyllidae of Nepal I
Results of the survey in the Kathmandu Valley, 1979. Part 1
(Hemiptera : Homoptera)*

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ネパールのキジラミ I
1979年にカトマンズ周辺で得られたキジラミについて その1
(半翅目：同翅亜目)

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ネパールなどヒマラヤを中心とした地域の生物相は、日本の（特に照葉樹林帯の）生物相と深い関わりをもつと考えられているので、キジラミ科も同様の問題をもつのではないかと考えられるが、ヒマラヤのキジラミ相の研究は、従来ほとんど行なわれていない。1979年4月下旬～5月上旬の短期間ではあるが、カトマンズ周辺の主として照葉樹林帯を中心とした樹林のキジラミ相の調査を行い、30種あまりの分布を確認し、その一部の種の食樹や習性を観察することができた。この報告には、そのうちタデキジラミ亜科 Aphalarinae, マルバネキジラミ亜科 Pauropsyllinae, ネットタイキジラミ亜科 Carsidarinae の諸亜科とキジラミ亜科 Psyllinae の一部で判明した8種について述べた。キジラミ亜科の大部分の種とトガリキジラミ亜科 Triozinae の種については続報で報告したい。8種の内4種は新種で、2種（トゲキジラミ *Togepsylla matsumurai* とフタスジヒゲブトキジラミ *Homotoma radiata*）は日本と共通種、他の2種（*Cecidopsylla schimae* と *Arytaina spinosa*）はインドと共通の種であった。新種のうち、1種（*Pauropsylla shiwapuriensis*）は亜熱帯系であるが、1種（*Psylla neolitseae*）は日本に同属の近縁種（シロダモキジラミ *Psylla kuwayamai*）があり、他の2種（*Euphyllura tominagai* と *Syringilla nepalensis*）は、属が異なるが同族でどちらにも近縁の属の種（ヒシキジラミ *Syntomoza magna*）が日本に分布している。

As far as the psyllid fauna is concerned, Nepal is one of the most unexplored areas in Asia, compared with the Indian subcontinent where a great deal of information concerned has been accumulated. It seems significant to clarify the psyllid fauna of the former country for consideration how the Japanese psyllid fauna was derived, especially in the warm-temperate evergreen forest.

During the short field trip to Kathmandu Valley from April 28th to May 6th in 1979, the author and his colleagues could obtain over 30 species of psyllids and observe their biology briefly including the host relationships. The target altitude of the present survey was set between 1,300~2,700 m to cover the warm-temperate forests. Among them 8 species belonging to the subfamilies Aphalarinae, Pauropsyllinae, Carsidarinae and Psyllinae in part are reported in the present paper. The majority of the subfamily Psyllinae and the subfamily Triozinae will be treated in the succeeding reports.

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Four species of them are new to science and two species are in common with Japan. The other two species are in common with India. Among four new species, one (*Pauropsylla shiwapuriensis*) is rather subtropical but other three species have the related species of the same genus or the closely related genera of the same tribe in Japan. Thus, there seems to be considerable relationship in various level between psyllid faunas of Japan and Nepal even in small number of species treated in the present report. All-inclusive discussion will be given after looking over the whole material in the future, however.

The type specimens and part of the type series treated in this paper are deposited in the collection of the Osaka Museum of Natural History.

Before going further, the author wishes to express his appreciation to Mr. I. HIURA of the Osaka Museum of Natural History for his constant encouragement, and also to the members of the party, Messrs. N. DOI, K. HARUSAWA, Y. KANO, K. KATSURA, K. TANI, O. TOMINAGA, and M. UMANO, for their assistance in getting the material.

Subfamily Aphalarinae

1. *Euphyllura tominagai* sp. nov. (Fig. 1)

Color : General color light brown to testaceous, with numerous dots of dark brown on thorax usually and on vertex occasionally. Vertex sometimes dark brown narrowly along posterior margin. Eyes brown to dark brown ; ocelli orange to red. Antenna light brown, with apical segment dark brown. Forewing opaque, coriaceous, with irregular maculae of light brown and white, with surface more or less wrinkled, with small dots of dark brown along posterior margin basally extending from dorsal surface of thorax as figured (Fig. 1—B). Hind wing more or less brownish, transparent. Legs lighter in color. Abdomen and genital segments light green, with both dorsal and ventral valves of female genitalia brownish apically.

Structure : Head (Fig. 1—A) large, nearly as wide as thorax, deflexed. Vertex short, nearly $\frac{2}{5}$ as long as wide, flat, with posterior margin rather straight, not pubescent. Genal cones short, shorter than half as long as vertex, almost continuous with vertex basally, contiguous, thin, broadly rounded apically, with short pubescence only apically. Eyes strongly recessive, prominently rimmed posteriorly. Antenna short, shorter than half as long as width of head including eyes, with two short apical setae, with 10th segment distinctly narrower than the preceding segments, relative length of each antennal segment for example as 3 : 3 : 3 : 2 : 2 : 2 : 3 : 3 : 3 : 2.

Thorax large, strongly convex, without pubescence ; pronotum rather long, with posterior margin nearly straight ; praescutum small, 1.5 times as long as pronotum ; mesoscutum large. Forewing (Fig. 1—B) broad, somewhat rhomboidal, nearly 2 times as long as wide, with anterior margin nearly straight and hairy, narrowly rounded apically, with medial cell large, with cubital cell small, with pterostigma large. Hind wing large, about $\frac{4}{5}$ as long as forewing,

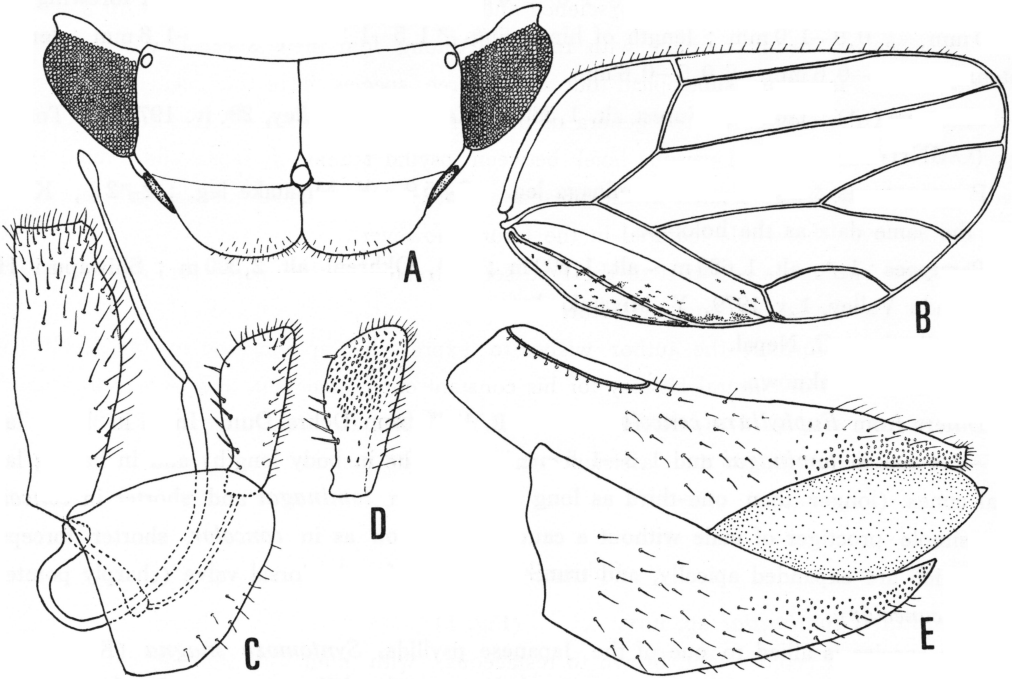


Fig. 1. *Euphyllura tominagai* sp. nov. (Gokarna Forest, alt. 1,380m).
A, Head, frontal view, ♀; B, Forewing, ♀; C, Male genitalia;
D, Inner surface of male forceps; E, Female genitalia.

2.2 times as long as wide, venation almost triozone. Legs short, stout; posterior tibia without basal spur, with 7 apical spurs; proximal segment of posterior tarsi with a pair of apical spurs; meracanthus short, blunt at apex. Abdomen (excl. genitalia) short, 2/3 as long as thorax, with shorter pubescence dorsally and with longer pubescence ventrally.

Male genitalia (Fig. 1—C) large, nearly as long as rest of abdomen; proctiger longer than forceps, slender in lateral aspect, with anterior margin almost straight, with posterior margin arched, narrow basally, truncate at apex, hairy; forceps in lateral aspect narrow basally and widened apically, obliquely truncate at apex, inner surface beset with numerous short and strong, retrorse setae in the apical two-thirds as figured (Fig. 1—D); subgenital plate high, convex ventrally; aedeagus quite long. Female genitalia (Fig. 1—E) large, as long as or longer than rest of abdomen; dorsal valve longer than ventral, in lateral aspect with dorsal margin sinuate, attenuate apically, somewhat truncate and slightly upturned at apex; ventral valve stout, sharply pointed and upturned at apex, produced ventrad near base; both dorsal and ventral valves with area of minute spines in addition to usual setae laterally on the apical one-third.

Length of body ♂ 1.6—1.7 mm, ♀ 2.0—2.3 mm; to tip of folded wings ♂ 2.2—2.3 mm,

♀ 2.5—2.8 mm ; length of forewing ♂ 1.8—2.0 mm, ♀ 2.0—2.1 mm ; width of forewing ♂ 0.9—1.0 mm, ♀ 0.9—1.0 mm ; length of hind wing ♂ 1.5—1.7 mm, ♀ 1.7—1.8 mm ; length of antenna ♂ 0.5—0.6 mm, ♀ 0.5—0.6 mm.

Holotype (♂) : Gokarna Forest alt. 1,380 m, Kathmandu Valley, 29. iv. 1979, O. Tominaga leg. (OMNH·TI—8).

Paratopotypes : 2♂4♀, O. Tominaga leg. ; 2♂5♀, Y. Miyatake leg. ; 2♂2♀, K. Tani leg. ; the same data as the holotype.

Paratypes : 1♂, alt. 1,680 m ~ alt. 1,800 m ; 1♂, Okhrenei alt. 2,300 m ; Shiwapuri Hills, Kathmandu Valley, 1.v. 1979, Y. Miyatake leg.

Distribution : C. Nepal.

Host plant : unknown.

Differs from *Euphyllura concolor* MATHUR, 1975 from Dehra Dun, India in being larger (1.7—2.4 mm in *tominagai* and 1.3—1.5 mm in *concolor* in body length) and in having larger genal cones (longer than one-third as long as vertex in *tominagai* and shorter in *concolor*), more simple proctiger of male without a caudal projection as in *concolor*, shorter forceps of male which are expanded apically, and truncate apex of female dorsal valve (sharply pointed at apex in *concolor*).

This species is allied to one of the Japanese psyllids, *Syntomoza magna* (KUWAYAMA, 1908) in some characters. The latter species belongs to the different genus, but belongs to the same tribe, Euphyllurini of Aphalarinae.

2. *Syringilla nepalensis* sp. nov. (Fig. 2)

Color : General color light brown to dull brown, with numerous dark brown dots on vertex, thorax and legs except for posterior leg. Antenna light brown, with two basal segments dark brown only ventrally, with apices of 4th, 6th, 8th and 9th segments dark brown. Forewing (Fig. 2—B) opaque, with irregular brown maculae as figured, ground color light brownish mostly and whitish partly. Hind wing semitransparent, brownish basally. Abdomen dark brown to black dorsally, yellowish brown to reddish brown ventrally, except for a basal segment dark brown.

Structure : Head (Fig. 2—A) narrower than thorax, deflexed. Vertex longer than half as long as wide between eyes, with posterior margin rather straight, rugose, with a shallow depression on each side of median suture, with antero-lateral portion produced forward near antennal socket, not pubescent ; genal cones small, 1/6 as long as vertex, below plane of vertex with short hairs. Eyes recessive, prominently rimmed. Antenna short, shorter than width of head, two basal segments swollen, with two short apical setae, relative length of each antennal segment for example as 4 : 3 : 3 : 2 : 2 : 3 : 2 : 3 : 3 : 2.

Thorax large, convex, without pubescence ; pronotum long, half as long as vertex, both

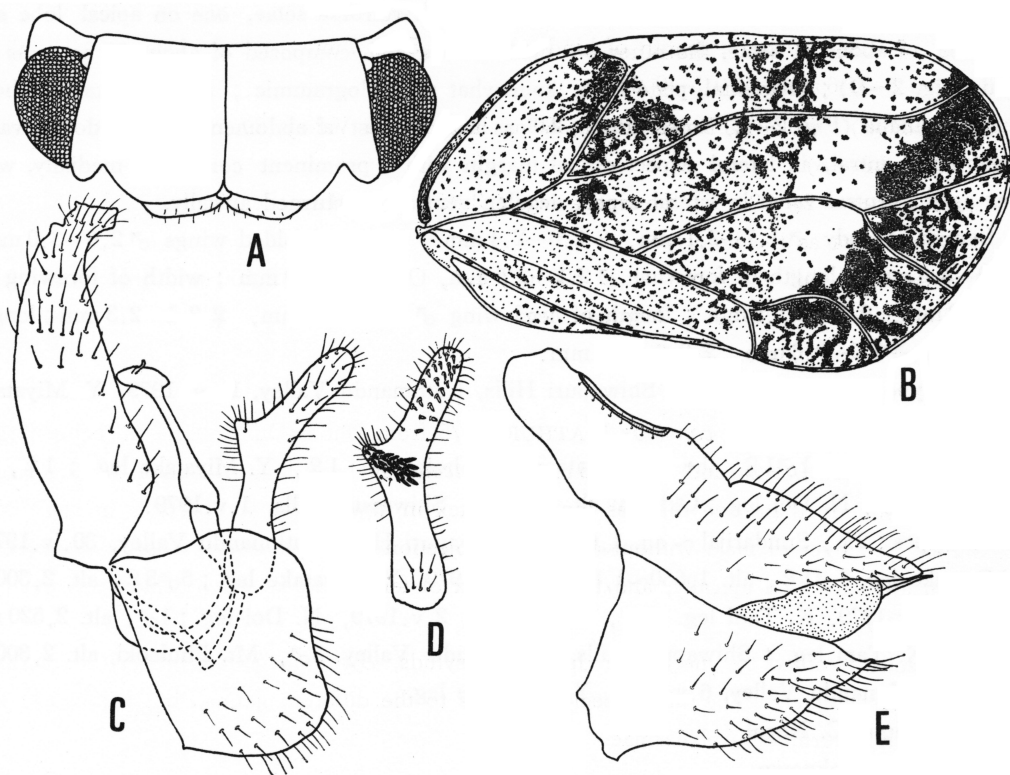


Fig. 2. *Syringilla nepalensis* sp. nov. (Shiwapuri Hills, 1,800–2,300 m).

A, Head, frontal view ; B, Forewing, ♂ ; C, Male genitalia ;
D, Inner surface of male forceps ; E, Female genitalia.

anterior and posterior margins nearly straight, deflexed ; praescutum small, nearly on same plane as pronotum, slightly longer than pronotum. Forewing (Fig. 2—B) broad, 1.9 times as long as wide, rhomboidal, coriaceous, broadly rounded apically, venation as figured. Hind wing large, 4/5 as long as forewing, 2.3 times as long as wide, venation almost triozone, but M and Cu with short common petiole, M close to R especially on the basal half, broadly rounded apically. Legs short, massive ; posterior tibia without basal spur, with 8 apical spurs ; proximal segment of posterior tarsi with a pair of apical spurs ; meracanthus moderately long, projected ventro-caudad, acute apically. Abdomen (excl. genitalia) shorter than thorax, with short pubescence dorsally and ventrally.

Male genitalia (Fig. 2—C) comparatively small, about half as long as rest of abdomen ; proctiger much longer than forceps, in lateral aspect narrow basally, slender, bent caudad apically, with anterior margin more or less serrate near apex, truncate at apex, hairy ; forceps in lateral aspect somewhat bilobed, median lobe small, apical lobe long and projected cephalo-

caudad, blunt at apex, inner surface with two series of retrorse setae, one on apical lobe and composed of about 21 setae, the other on median lobe and composed of about 30 setae as figured (Fig. 2—D); subgenital plate high, somewhat parallelogrammic; aedeagus rather short. Female genitalia (Fig. 2—E) large, nearly $2/3$ as long as rest of abdomen, hairy; dorsal valve longer than ventral, in lateral aspect dorsal margin with a prominent convexity medially, with blunt apex; ventral valve in lateral aspect swollen ventrally, upturned apically.

Length of body ♂ 1.7—2.1 mm, ♀ 2.0—2.4 mm; to tip of folded wings ♂ 2.6—3.0 mm, ♀ 3.0—3.5 mm; length of forewing ♂ 2.1—2.5 mm, ♀ 2.4—2.9 mm; width of forewing ♂ 1.1—1.3 mm, ♀ 1.2—1.5 mm; length of hind wing ♂ 1.8—2.0 mm, ♀ 2.1—2.3 mm; length of antenna ♂ 0.5—0.6 mm, ♀ 0.6—0.7 mm.

Holotype (♂): alt. 2,100 m, Shiwapuri Hills, Kathmandu Valley, 1. v. 1979, Y. Miyatake leg. (OMNH·TI—9).

Paratopotypes: 1♂1♀, the same data as the holotype. 1♀, Y. Miyatake leg.; 1♀, K. Tani leg.; 1♂, N. Doi leg.; Okhreni alt. 2,300 m, Shiwapuri Hills, 1.v.1979.

Paratypes: 2♀, Sundarijal ~ alt. 1,680 m, Shiwapuri Hills, Kathmandu Valley, 30.iv.1979, Y. Miyatake leg. 1♂1♀, alt. 1,680~1,800m, 1.v.1979, Y. Miyatake leg.; 5♂3♀, alt. 2,300~2,580 m, 2.v.1979, K. Tani leg.; 1♂, alt. 2,500m, 2.v.1979, N. Doi leg.; 1♂, alt. 2,520 m, 1.v.1979, K. Tani leg.; Shiwapuri Hills, Kathmandu Valley. 2♂, Mt. Phulcoki, alt. 2,300~2,200 m, Kathmandu Valley, 6.v.1979, Y. Miyatake leg.

Distribution: C. Nepal.

Host plant: unknown.

This species is closely related to *Syringilla humerosa* LOGINOVA, 1967 from Vladivostok, Primorskij, USSR in general, but differs from the latter in having not arched but straight Cu_1 of hind wing, much longer distance from median lobe to apex of apical lobe of male forceps and dorsal valve of female genitalia which is much longer.

As in the preceding species, this species is also related to the Japanese psyllid, *Syntomoza magna* (KUWAYAMA) generally, but belongs to the different genus of the same tribe, Euphyllurini of Aphalarinae.

Subfamily Pauropsyllinae

3. *Togepsylla matsumurai* KUWAYAMA, JR. (Fig. 3)

Togepsylla matsumurai KUWAYAMA, JR., 1949, Ins. Mats. 17(1): 48.

Specimens examined: 27♂22♀, Mt. Phulcoki, alt. 2,600 m; 1♂1♀, Mt. Phulcoki, alt. 2,600~2,400 m; Kathmandu Valley, 28.iv.1979, on *Lindera* sp., Y. Miyatake leg. 1♀, Godawari, alt. 1,540 m, Kathmandu Valley, 6.v.1979, Y. Miyatake leg.

Distribution: C. Nepal, Japan (Honshu, Shikoku, Kyushu).

Host plant confirmed: *Lindera* sp. [Lauraceae].

Comparing with specimens from Japan, they are slightly different in having more elongate radial and medial cells of forewing and scarcely longer dorsal valve of female genitalia as shown in Fig. 3. These differences are too minor, however, to warrant it a new species or subspecies at present. The present species is easily distinguished from *T. takahashii* KUWAYAMA, JR., 1931 known from Taiwan in having forewing with long, stout R_1 and without brownish bands along veins, and much shorter genitalia in both male and female.

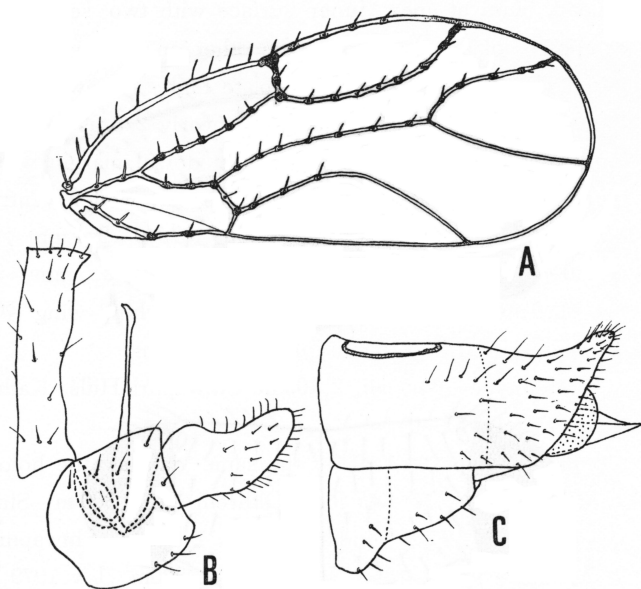


Fig. 3. *Togeipsylla matsumurai* KUWAYAMA, JR. (Mt. Phulcoki, alt. 2,600 m). A, Forewing, ♀ ; B, Male genitalia ; C, Female genitalia.

4. *Pauropsylla shiwapuriensis* sp. nov.

(Fig. 4)

Male : General color dark brown to black. Antenna dull yellow, with two basal and two apical segments dark brown respectively. Forewing dark brown and opaque in the basal two-thirds, slightly lighter basally, yellowish and transparent in the apical one-third as shown in Fig. 4—A. Hind wing brownish in the basal two-thirds in accordance with marking of forewing as shown in Fig. 4—B. Legs dark brown except for all tarsi and posterior tibiae light brown. Genitalia black, with apex of proctiger light brown.

Head (Fig. 4—C) small, narrower than thorax, deflexed. Vertex half as long as wide, with a rather deep depression medially on each side of median suture, with long pubescence. Genal cones small, nearly $1/3$ as long as vertex, conical, acute at apex, widely separated, below plane of vertex, hairy, with one long and one short apical setae, relative length of each antennal segment as 3 : 3 : 11 : 3 : 3 : 4 : 4 : 3 : 2 : 1.

Thorax wide and flat, with long pubescence ; pronotum short, deflexed, rather flat laterally ; praescutum rhomboid. Forewing (Fig. 4—A) large, broad, nearly 2 times as long as wide, rather narrowly rounded apically, remarkably convex medially centering around apex of vein $M+Cu$, with considerably long pubescence not only on veins but also on whole membrane, with pterostigma obsolete, with both medial and cubital cells small. Hind wing (Fig. 4—B) large,

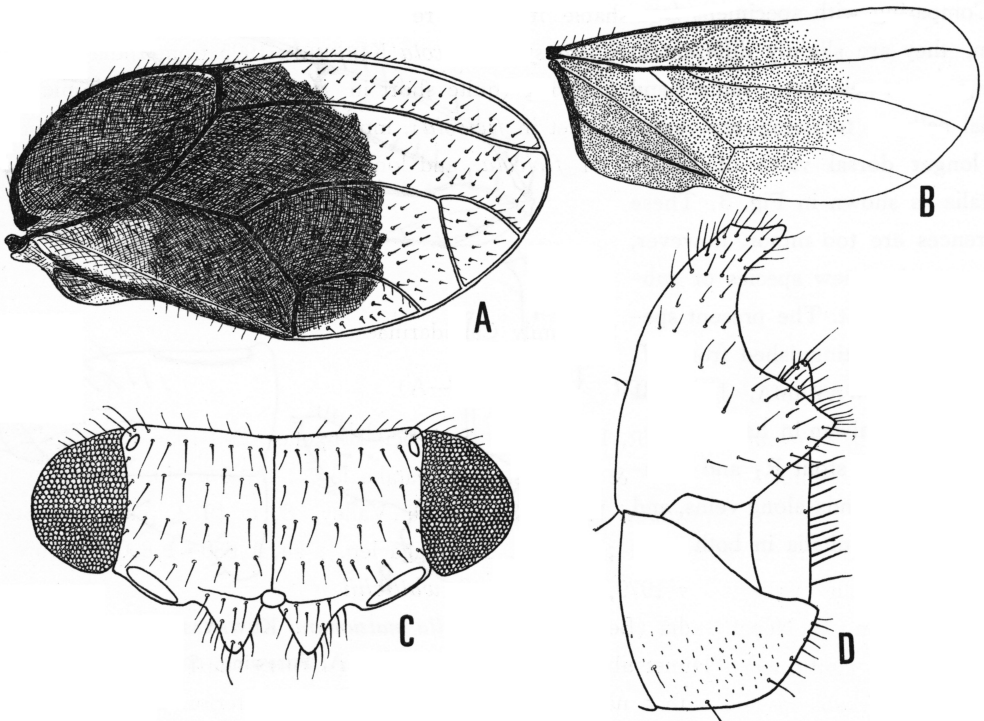


Fig. 4. *Pauropsylla shiwapuriensis* sp. nov., ♂ (Top, alt. 2,732m, Shiwapuri Hills).

A, Forewing ; B, Hind wing ; C, Head, frontal view ; D, Male genitalia.

broad, about $4/5$ as long as forewing, 2.5 times as long as wide, R and M with common petiole, with cubital cell large. Legs long, massive, with long pubescence ; posterior tibia without basal spur, with 9 apical spurs ; proximal segment of posterior tarsi without apical spur ; meracanthus long, slender, projected ventro-caudad, acute at apex. Abdomen (excl. genitalia) short, half as long as thorax, pubescent dorsally and ventrally.

Male genitalia (Fig. 4—D) large, nearly as long as rest of abdomen, high ; proctiger large, longer than forceps, in lateral aspect apical portion bent caudad, strongly produced basally as figured, hairy ; forceps parallel-margined, with stiff hairs posteriorly, blunt apically ; subgenital plate high at base, with micro setae in addition to ordinary long hairs.

Length of body ♂ 1.5 mm ; to tip of folded wings ♂ 2.3 mm ; length of forewing ♂ 2.1 mm ; width of forewing ♂ 1.1 mm ; length of hind wing ♂ 1.8 mm ; width of hind wing ♂ 0.7 mm ; length of antenna ♂ 0.9 mm ; width of head including eyes ♂ 0.7 mm.

Holotype(♂) : Top, alt. 2,732 m, Shiwapuri Hills, Kathmandu Valley, 3.v.1979, Y. Miyatake leg. (OMNH·TI—7).

Distribution : C. Nepal.

Host plant : unknown.

This species is easily distinguishable from any related species of the genus in the peculiar marking of forewing. Differs from *Pauropsylla ficicola* KIEFFER, 1905 from India (Bengal) in having much longer M+Cu vein in forewing (quite short in *ficicola*), distinctly conical genae (short and swollen beneath antennal socket in *ficicola*), more elongate cubital cell in hind wing which is nearly twice as long as that of *ficicola*, and longer male proctiger with narrow apical portion.

Subfamily Carsidarinae

5. *Cecidopsylla schimae* KIEFFER (Fig.5—A)

Cecidopsylla schimae KIEFFER, 1905, Ann. Soc. Sci. Bruxelles, 29 : 165—167, figs.

Specimens examined : 1♂ 2♀ & nymphs, Y. Miyatake leg. ; 2♂ 5♀, O. Tominaga leg. ; Sundarikal ~ alt. 1,680 m, Shiwapuri Hills, Kathmandu Valley, 30.iv.1979, galls on *Schima wallichii*. 2♂ 2♀, Y. Miyatake leg. ; 2♀, O. Tominaga leg. ; alt. 1,680~1,800 m, Shiwapuri Hills, Kathmandu Valley, 1.v.1979, galls on *S. wallichii*.

Distribution : C. Nepal, India (Bengal).

Host plant confirmed : "Himetsubaki"—*Schima wallichii* CHOIS (CHILAUNI) [Theaceae].

This remarkable psyllid with a narrow brownish band along posterior margin of forewing has been known only from Bengal, India. The characters of the present material are well consistent with the description of the species. There seems to be no definite differences between both forms from Bengal and Nepal.

The nymphs make characteristic roll galls of light green along the margins of leaves. Those galls are stiff swellings and nymphs inhabit inside. Several galls are sometimes fused together and become the big mass. The nymphs come out from galls when they are moulting into adults. As the adults were abundantly hatching in the beginning of May at the Shiwapuri Hills and they seem to appear in September to November in Bengal, it is presumable that the life cycle of this species is bivoltine or more.

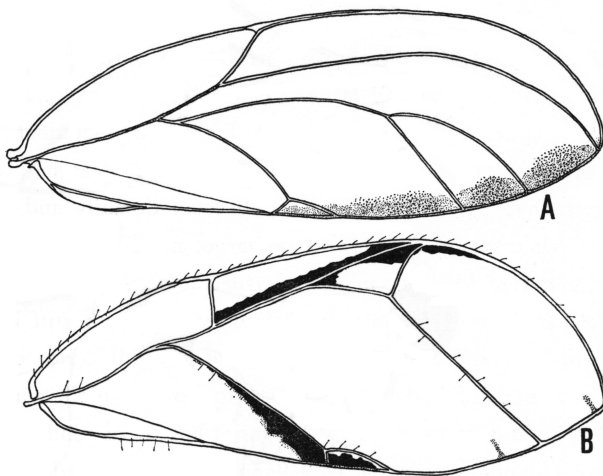


Fig. 5. A, Forewing of *Cecidopsylla schimae* KIEFFER, ♂ (Shiwapuri Hills, alt. 1,680—1,800m). B, Forewing of *Homotoma radiata* KUWAYAMA (Okhreni alt. 2,300m, Shiwapuri Hills).

6. *Homotoma radiata* KUWAYAMA (Fig. 5—B)

Homotoma radiatum KUWAYAMA, 1908, Trans. Sapporo Nat. Hist. Soc. 2 : 158.

Specimen examined : 1 ex. (both left and right forewings only !), Okhreni alt. 2,300 m, Shiwapuri Hills, Kathmandu Valley, 1.v.1979, on *Ficus* sp., Y. Miyatake leg.

Distribution : C. Nepal, Taiwan, Japan (Okinawa, Kyushu, Shikoku).

Host plant confirmed : *Ficus* sp. [Moraceae].

Unfortunately only both sides of forewings were obtained finally, although another complete example which disappeared later was caught when collecting. As far as the wing characters are concerned, the present material can be most likely identified as *Homotoma radiata* in having two dark brown stripes along Rs and Cu to Cu₁, an acute apex, and much smaller cell 2r compared with cell 1r. Differs from *H. indica* MATHUR, 1975 from Dehra Dun, India in having an additional dark brown stripe along Cu and Cu₁, and a more acute apex. Differs from *H. boheae* YU, 1956 from S. China in having more elongate wing, an acute apex, smaller cell 2r, and more elongate medial cell. Further examination should be necessary when more sufficient material will be available.

7. *Arytaina spinosa* MATHUR (Fig. 6)

Arytaina spinosa MATHUR, 1975, Psyllidae of the Indian Subcontinent : 185.

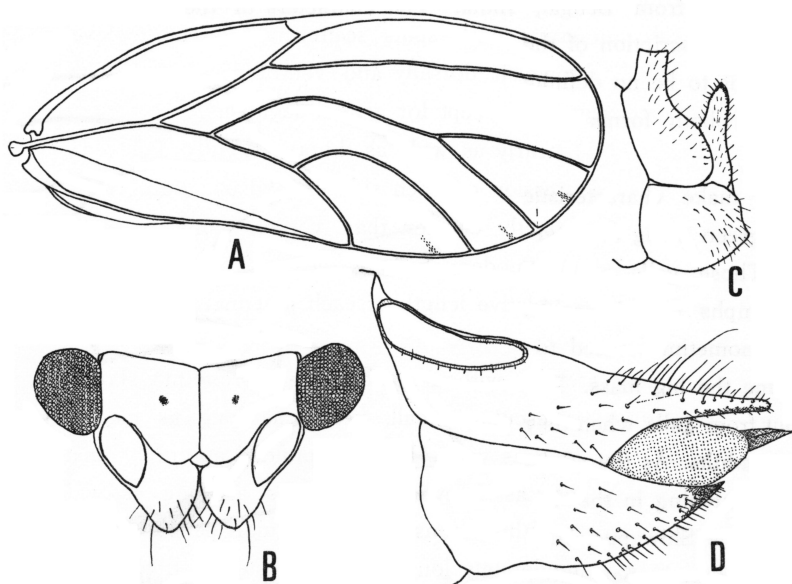


Fig. 6. *Arytaina spinosa* MATHUR (Mt. Phulcoki alt. 2,400—1,540 m).
A, Forewing, ♀ ; B, Head, frontal view, ♀ ; C, Male genitalia ; D,
Female genitalia.

Specimens examined : 4♂6♀, 1 ex. (without abdomen), Mt. Phulcoki, alt. 2,400~1,540 m, Kathmandu Valley, 6.v.1979, on *Albizzia* sp., O. Tominaga leg.

Distribution : C. Nepal, India.

Host plant confirmed : *Albizzia* sp. [Leguminosae].

The present material can be identified as this species, although there are some minor differences in the characters of the venation of forewing, genal cones and female genitalia between the specimens from Nepal and ones from India according to their description. The median cell of forewing is long and elongate in the former form (Fig. 6—A), and short and wide in the latter form. The genal cones are long and conical in the former (Fig. 6—B), and short and obsolete in the latter. The ventral margin of ventral valve of female genitalia is produced ventrad in the former (Fig. 6—D) and rather straight in the latter.

8. *Psylla neolitseae* sp. nov. (Fig.7—N)

Color : General color yellowish brown to light brown, with dark brownish markings or stripes dorsally and laterally. Antenna light brown basally and dark brown nearly in the apical half, with apices of 3rd and 4th segments dark brown. Pronotum more or less whitish. Praescutum and mesoscutum usually with a pair of characteristic markings of dark brown to black anteriorly, with dorsal stripes of mesoscutum brownish but obscure. Forewing more or less yellowish, transparent, with numerous dark spots scatteringly on most of veins as shown in Fig. 7—N₁. Abdomen usually brownish dorsally and ventrally, at least with brownish band along anterior margin of each segment, except for genital segments.

Structure : Head (Fig. 7—N₂) nearly as wide as thorax, slightly deflexed. Vertex half as long as wide with rather deep depression on each side of median suture, with short pubescence. Genal cones rather short, distinctly shorter than vertex, conical, moderately divergent, subacute at apex, pubescent. Antenna moderately long, nearly 2 times as long as width of head including eyes, with 2 apical setae, relative length of each antennal segment for example as 2 : 2 : 11 : 8 : 7 : 7 : 6 : 6 : 3 : 3.

Thorax broad, moderately arched, without pubescence ; pronotum short, nearly on same plane of vertex and praescutum ; praescutum small, nearly as long as mesoscutum. Forewing elongate oval, 2.1—2.2 times as long as wide, broadly rounded apically, venation as shown in Fig. 7—N₁. Hind wing 3/4 as long as forewing, 2.7 times as long as wide, with anterior margin produced forward medially, without conspicuous common petiole of M and Cu, appearing triozine consequently. Legs moderately long, hairy ; posterior tibia without a basal spur, with 5 or 6 apical spurs ; meracanthus short, acute at apex ; proximal segment of posterior tarsi with a pair of apical spurs. Abdomen (excl. genitalia) short, as long as thorax, with longer pubescence ventrally.

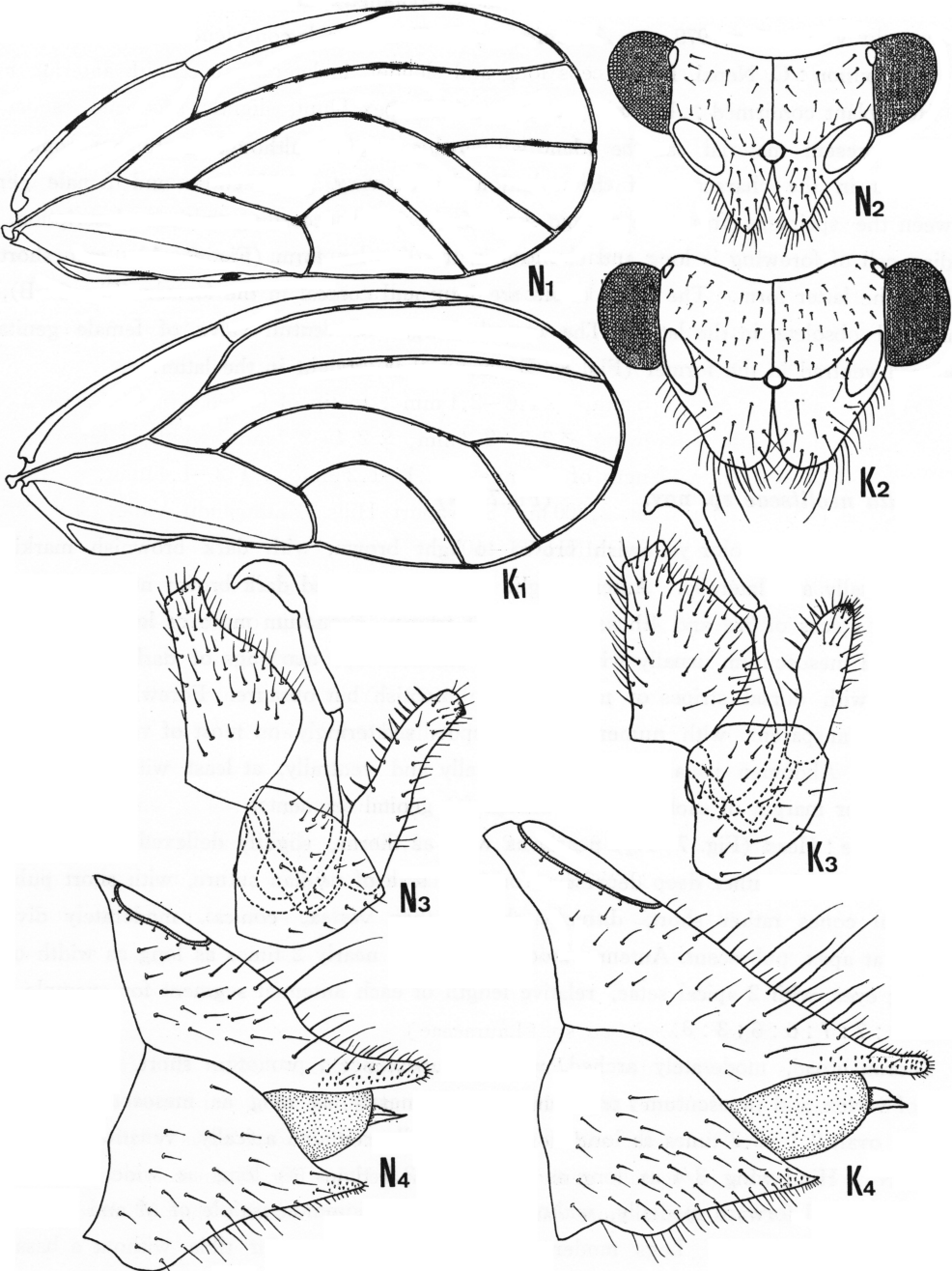


Fig. 7. N, *Psylla neolitseae* sp. nov. (Okhreni alt. 2,300 m, Shiwapuri Hills) ; K, *Psylla kuwayamai* CRAWFORD (Hiruguchi, Shiga Pref., Japan). (1, Forewing ; 2, Head, frontal view ; 3, Male genitalia ; 4, Female genitalia).

Male genitalia (Fig. 7—N₃) small, 2/5 as long as rest of abdomen ; proctiger nearly as long as forceps, in lateral aspect obliquely truncate at apex, conspicuously produced caudad basally and posteriorly, hairy ; forceps long and slender, in lateral aspect with anterior margin sinuate, with posterior margin nearly straight, with apex blunt, slightly produced caudad into a subacute apex as figured, inner surface with many long retrorse setae ; subgenital plate convex posteriorly, with pubescence uniformly ; aedeagus stout, with apical segment short. Female genitalia (Fig. 7—N₄) moderately long, slightly shorter than rest of abdomen ; dorsal valve in lateral aspect distinctly longer than ventral, with dorsal margin produced outward medially, attenuate apically, hairy, blunt and scarcely upturned at apex ; ventral valve in lateral aspect with arched posterior margin basally, acute at apex ; both dorsal and ventral valves with area of minute spines in addition to usual setae on apical portion as figured.

Length of body ♂ 1.4—1.5 mm, ♀ 1.6—2.1 mm ; to tip of folded wings ♂ 2.6—2.8 mm, ♀ 2.9—3.2 mm ; length of forewing ♂ 2.2—2.3 mm, ♀ 2.4—2.7 mm ; width of forewing ♂ 0.9—1.0 mm, ♀ 1.0—1.1 mm ; length of antenna ♂ 1.1—1.2 mm, ♀ 1.2—1.4 mm.

Holotype (♂) : Okhreni alt. 2,300 m, Shiwapuri Hills, Kathmandu Valley, 1.v.1979, on *Neolitsea* sp., Y. Miyatake leg. (OMNH·TI—10).

Paratopotypes : 16♂ 25♀, 1.v.1979, Y. Miyatake leg. ; 12♂ 23♀, 3.v.1979, O. Tominaga leg. ; Okhreni alt. 2,300 m, Shiwapuri Hills, Kathmandu Valley, on *Neolitsea* sp. 2♂ 1♀, Y. Miyatake leg. ; 1♂, O. Tominaga leg. ; Sundarijal ~ alt. 1,680 m, Shiwapuri Hills, 30.iv. 1979. 1♂, 1.v.1979, Y. Miyatake leg. ; 2♂ 3♀, 3.v.1979, Y. Miyatake leg. ; 21♂ 22♀, 2.v.1979, K. Tani leg. ; alt. 2,300 ~ 2,580 m, Shiwapuri Hills. 1♂ 4♀, alt. 2,732 ~ 2,300 m, Shiwapuri Hills, 3.v.1979, Y. Miyatake leg.

Paratypes : 1♀, alt. 2,600 m, 28.iv.1979, O. Tominaga leg. ; 4♂ 4♀, alt. 2,600 ~ 2,400 m, 28.iv.1979, O. Tominaga leg. ; 2♀, alt. 2,350 ~ 2,300 m, 6.v.1979, Y. Miyatake leg. ; Mt. Phulcoki, Kathmandu Valley. 30♂ 27♀, Y. Miyatake leg. ; 10♂ 7♀, O. Tominaga leg. ; 2♂ 1♀, K. Harurawa leg. ; 6♂ 11♀, K. Tani leg. ; 2♂ 2♀, N. Doi leg. ; Gokarna Forest, alt. 1,380 m, Kathmandu Valley, 29.vi.1979, on *Neolitsea* sp.

Distribution : C. Nepal.

Host plant confirmed : *Neolitsea* sp. [Lauraceae].

This species is closely related to *Psylla kuwayamai* CRAWFORD, 1911 from Taiwan and Japan, but differs from the latter in having conical and subacute genal cones, longer proctiger produced posteriorly near middle and long forceps turned caudad apically in male genitalia, and short dorsal valve in female genitalia as compared in Fig. 7. In coloration the present species is much darker and has more dark spots on veins of forewing than *P. kuwayamai*.

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Explanation of Plate 5

- Figs. A-B. Leaf margin roll galls of *Cecidopsylla schimae* KIEFFER on *Schima wallichii*, Shiwapuri Hills, alt. 1,680 m, 30.iv.1979.
- Fig. C. *Togepsylla matsumurai* KUWAYAMA, Jr., ♀, Mt. Phulcoki, alt. 2,600 m, 28.iv.1979, Y. Miyatake leg. Length of forewing ♀ 2.0 mm.
- Fig. D. *Pauropsylla shiwapuriensis* sp. nov., ♂, Shiwapuri Hills, Top, alt. 2,732 m, 3.v.1979, Y. Miyatake leg. Length of forewing ♂ 2.1 mm.
- Figs. E-F. *Cecidopsylla schimae* KIEFFER. E, ♂, 30.iv.1979. ; F, ♀, 1.v.1979 ; Shiwapuri Hills, alt. 1,680 m, O. Tominaga leg. Length of forewing ♂, 2.8 mm ; ♀, 3.5 mm.
- Figs. G-H. *Euphyllura tominagai* sp. nov. G, ♂, O. Tominaga leg. ; H, ♀, Y. Miyatake leg. ; Gokarna Forest, alt. 1,380 m, 29.iv.1979. Length of forewing ♂, 1.8 mm ; ♀, 2.0 mm.
- Figs. I-J. *Syringilla nepalensis* sp. nov. I, ♂, Mt. Phulcoki, alt. 2,300-2,200 m, 6.v.1979, Y. Miyatake leg. ; J, ♀, Sundarijal ~ alt. 1,680 m, Shiwapuri Hills, 30.iv.1979, Y. Miyatake leg. Length of forewing ♂, 2.1 mm; ♀, 2.6 mm.
- Figs. K-L. *Arytaina spinosa* MATHUR. K, ♂ ; L, ♀ ; Mt. Phulcoki, alt. 2,400-1,540 m, 6.v.1979, O. Tominaga leg. Length of forewing ♂, 2.0 mm ; ♀, 2.5 mm.
- Figs. M-N. *Psylla neolitseae* sp. nov., ♀, Okhreni, alt. 2,300 m, Shiwapuri Hills, 3. v. 1979, O. Tominaga leg. Length of forewing ♀, 2.6 mm.

